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STRATEGIC PLANNING AND RESEARCH BRANCH
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A LETTER FROM ALBERTA

Blazing the communication trail

Dear Reader:

Past issues of **Inside/Out** have emphasized "building links among researchers" and "going global" in economic development and trade. An infrastructure to accomplish these and many other goals of the information age is rapidly emerging in telecommunications networks. Their capacity to send voice, text and video over fibre promises to revolutionize the way we work and conduct human affairs.

In the United States, Vice-President elect Albert Gore successfully championed the National Research and Education Network (NREN) bringing global information resources and human interaction to Americans from kindergarten to the grave. The speed, carrying capacity and low usage cost of this network places its order of magnitude above Canada's CANet. The growth in users on the "NREN" is staggering — about five-fold in the last three years and some 33 percent in the first half of 1992 alone.

Canada urgently needs to catch up both in usage culture and in network capacity. A national proposal to do so is embodied in **CANARIE**, the Canadian Network for the Advancement of Research, Industry and Education. **CANARIE**, suitably buttressed by regional network upgrades, will enable Canadians to re-assume a leadership role in telecommunications and ensure Canadian competitiveness. As Donald Tapscott, Chair of the Minister's Advisory Committee on a Telecommunications Strategy for Ontario stated in **Telecommunications: Enabling Ontario's Future**: "This report is about burning

issues facing business, government, labour, communities, and above all the people of Ontario. These issues are economic renewal, wealth creation and jobs; social development and sustained quality of life; and the reshaping of government for efficiency, deficit reduction, customer service and the effective delivery of government programs....We can continue, business as usual, and in doing so fall behind. Or we can, in partnership, set out on a new course....The stakes in doing so are huge."

In collaboration with others, the University of Alberta authored a "discussion paper" for Alberta: **Toward a Telecommunications Infrastructure**. It calls for a provincial and national telecommunications upgrade to neutralize remoteness and offer immediate global access to people and information. The "discussion paper" served as a background for a very heavily subscribed, full day work shop sponsored by Ed Tel, AGT, Northern Telecom, Alberta Telecommunications and Technology and the University of Calgary. Exciting applications of networking technology were made apparent — remote medical diagnostics; distant access to library holdings; the Western Purchasing Information Network; distance education at all levels, including the simultaneous on-site training or retraining of employees at diverse locations.

Feedback on the Workshop was positive. It set the stage for new partnerships for meeting government, educational and business needs for reliable, efficient network services. A key factor in the collaboration essential to an upgrade of Alberta's ARNet remained the need to convey effectively to business and industry the benefits of broad-based information technology.

R. L. Busch

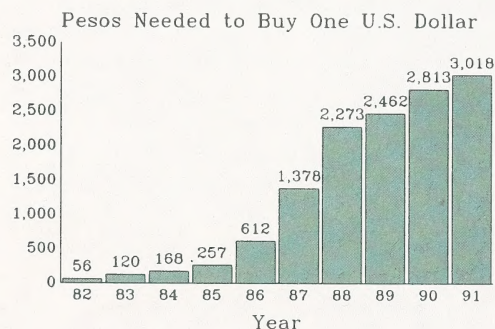
Dr. Robert L. Busch, Associate Vice-President (Research)
University of Alberta

¿Mañana - el día para México?

Tomorrow — the day for Mexico? In the 1970's new found oilwealth in Mexico appeared to be the country's answer to climbing out of the third world poverty trap. Export oil sales guaranteed a steady stream of foreign currency and access to loans on the international markets, enabling Mexico to begin the groundwork for a modern industrial economy. It seemed a balance had been struck and that Mexico was on its way to prosperity.

Then the unexpected happened — oil prices collapsed in the early 1980s, turning Mexico's petro dollar dependent economy upside down (and *Inside/Out*). Simultaneously, a sudden rise in international interest rates occurred and Mexico was caught. It needed cash flow from a high oil price to sustain development of the economy and to pay back money borrowed on the international markets. A balance could not be maintained and Mexico again began to look like the third world country it didn't want to be. The value of the Peso began to slide on currency markets, inflation soared and nervous holders of capital removed their liquid funds from the country.

Average Foreign Exchange Rate
Peso vs. US Dollar



Source: IMF International Financial Statistics

By 1982 it was clear to the government administration that a new approach to creating a prosperous economy had to be taken. Under the Presidency of Miguel De la Madrid the new approach to prosperity for Mexico was initiated. The plan encompassed three themes:

- 1) Stabilize the financial situation,
- 2) Move away from a protectionist economy to an open liberal economy, and
- 3) Divest state holdings in the private sector.

To stabilize the economy the government had to temporarily contravene one of its objectives — the banking sector was nationalized. By owning the financial sector outright Mexico was able to control domestic capital markets and stop the flight of capital to other countries. In the governments view this was a necessary measure that would be reversed at an unspecified date in the future.

Over the years Mexico's protectionist guise, while succeeding in keeping foreign companies out, created an economy that was inefficient and unresponsive to change. Market liberalization was a key component to creating a competitive environment in Mexico. Through a staged approach trade barriers were reduced to force industry in line with world market forces. In keeping with this initiative Mexico joined GATT as a full member in 1986.

Divestiture of holdings in private enterprise represented an "about face" in government policy. A protectionist path had made government ownership in the private sector a priority in some cases and a necessity (to avert bankruptcies) in other cases. Most enterprises owned by the state were poorly run, overstaffed, and money losers. Divesting these firms reduced financial obligations of the government while forcing companies to survive in the real world.

The Tough Years 1982-1988

In retrospect creating the plan was the easy part for Mexico, implementing and sticking with the plan required faith. In the six years between 1982 and 1988 represented the most difficult experience in the country's economic history. Most economic activity stagnated, production growth was near zero, real per capita income and salaries fell almost 50%, and the Peso depreciated against the U.S. dollar by approximately 99 percent. If this wasn't enough, Mexico's foreign debt rose to over US \$100 billion dollars by 1988. Ouch!

Two major stumbling blocks inhibited Mexico from making any real progress in growth; inflation and debt. These related factors needed to be addressed if Mexico was to continue on the road to economic reform and prosperity.

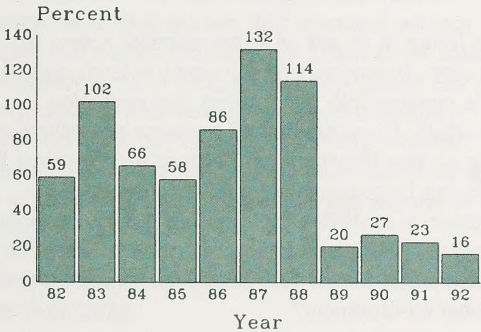
The Better Years 1988-1992

At the start of the term of President Carlos Salinas de Gortari the first item on the agenda addressed was the debt situation. Mexico was able to negotiate forgiveness on part of the debt and new payback periods and lower

interest rates on the remainder. Enough relief was received to enable the economy to begin to grow again.

By 1992 Mexico's economic winter had given way as the economy began to respond to a more stable financial environment. Competition came into effect as exposure to international forces increased. The sale of 908 state controlled firms had taken place since 1982 (from an original total of 1,155) greatly reducing the government financial obligations. Sell-off included mining companies, sugar mills, the telephone company (Telefonos Mexico) and commercial banks. Development banks were kept in state hands to enable direction of regional development initiatives.

Rate of Change of the Consumer Price Index
Mexico 1982 to 1992



Source: IMF International Financial Statistics

1992 and the Future - Happy Years?

Mexico has made tremendous progress in turning around its economy since 1982. The process has not been pleasant, rather it has been like a trip to the dentist — it was a painful experience but it was necessary for long term economic gain.

The future looks bright for the country if it keeps on track with the direction it is now headed. Industry is beginning to flourish throughout the country, especially in the fields of automobile and electronics manufacturing. In addition, foreign companies have recognized Mexico's growing capabilities. They have been locating and expanding operations throughout the country further contributing to economic success.

Free trade agreements are being pursued both north and south of Mexico to further drive the economy to higher performance levels and prosperity. Of major importance is the agreement in principle to pursue a North American

Free Trade Agreement (NAFTA) with the USA and Canada. This is expected to reach final ratification in late 1993 or early 1994.

It looks like Mexico's Mañana is finally going to happen rather than only being a distant dream. Prosperity at some time soon will be found in Mexico for the average citizen instead of across the border on the other side of the Rio Grande.

EDITORIAL

Management in turbulent times

Based on more than 25 years of experience as a line manager and management consultant it is my view that of all the inputs to production efficiency, management style is the most interesting and the most important. In this regard the recent emphasis on "empowerment" is a welcome initiative.

Empowerment and a re-emphasis on participative management, is a critical element in our effort to stay competitive in a turbulent period of political and economic restructuring. It is necessary to remind ourselves of the problems associated with the dysfunctional elements of the command and control management style. Many elements of these elements which persist from the 1980s in organizations as we enter the 1990s.

The elements of management style which concern me are largely conveyed by the two terms "hands-on" and "perceptual management." The term "hands-on" achieved prominence with the publishing of "In Search of Excellence" by Tom Peters and Bob Waterman in 1982. They describe the "hands on" approach in successful organizations as changing the role of the manager from planner and counsellor to commander and director. "Perceptual management" labels a management approach that emphasizes the importance of applying the spontaneous insight of senior management. These insights should initiate and direct immediate changes in strategic direction, command and control direct from the perception of management to implementation.

The acceptance of perceptual management concepts appears to have been a reaction designed to stop a number of factors decreasing the competitive position of U.S. and Canadian firms relative to far Eastern and European producers. The accelerated rate of change, increased uncertainty. Increasing attention was given to the

environment, human rights, and social issues adding to the pressures on our Chief Executive Officers. The appeal of hands-on, perceptual management was that it allowed senior executives to step around policy development and planning, roll-up their sleeves and display what Peters and Waterman called "a bias for action."

The sentiment of the times is captured in such phrases as "Go for it" and "Do it." For many this was a de facto return to an earlier, simpler era reminiscent of the management styles of the first half of the century. Facing sickly financial statements, anxious shareholders and control-minded financial officers, executives dropped back to a simpler more autocratic management style and Took Charge! Managers fulfilling the cultural expectations of leaders in a crisis and centralized the decision making process in the organization.

Perceptual management and the hands-on approach prescribed speed and flexibility; the alternative, policy development and long term strategic planning, were seen as being too bureaucratic. The need was to "do something - do anything." Many managers took pride in the fact that their policy was that they had no policy; it would take too long to test ideas and build organizational consensus before proceeding to the implementation stage.

The price of short term approaches has been high and is still exacting payment from many firms. Long-term profitability and survival was left more to chance than good management. The hidden costs to these organizations from the loss of meaningful participation in planning and consensus-building is difficult to measure. The ability of organizations to strive, as a whole, for strategic results in the longer term has been compromised. A crisis laden workplace and the unfocused exercise of executive power have sapped motivation, initiative and overall performance. Middle managers and executives striving to be hands-on have become territorial, injected themselves deeper into everyday problems and exhausted themselves with unnecessary workloads. Management activities have further compromised their decisions and overall performance. Managers were fuelled by the idea that delegating a task to others was losing control.

If we are to restore our competitive economic position we must put these dated concepts of management behind us. We must temper our cultural emphasis from being fast, decisive and action-oriented to emphasize being right, and building organizational consensus. We must end our somewhat feudal idolization of "Chief" executive officers, and restore these mere mortals to a lower pedestal that is built on teamwork and delegation of responsibility —

"Empowerment." Power-seeking, territorial and autocratic managers should be encouraged to move on and their places at the helm should be filled with policy makers and planners who believe in the value of the participative approach. Until this occurs many organizations will continue to under-perform. We would do well to remember in the final analysis that solutions lie not just in the wisdom and courage of our leaders, but where it always has - in the actions and initiatives of the thousands of individuals who build the products and provide the services the customer needs.

FUTURES

Become an information person

We are living in an era of unprecedented access to information. Everyday raw information from around the world is pouring into government and corporate headquarters. Government and business executives are choking on raw information. To their surprise they find that running large organizations with too much information is as difficult as running it with too little information. The question is: how can we cope with the information glut in this fast-paced, information-driven, and global environment?

Principles of information processing are straightforward. First, sort out relevant from irrelevant information. Second, collect and monitor the relevant information as efficiently as possible. Third, process this information for the purpose of the decision-making needs of the organization. Fourth, make sure that this information is made available to decision-makers of the organization.

These principles can be practised by government and corporate executives by themselves, or can be done by an intelligence unit set up in the organization. The real difficulty lies in the effective implementation of these principles. The executives must first ask themselves a question, "What is it we need to know to achieve our objectives?" It is necessary to have a well-defined objective and identify what information is relative to the achievement of our objective. This is essential to get effective information.

Even when an objective is defined, sorting out relevant and irrelevant information is not easy. But here lies the knack of intelligence: The effective use of information does not depend so much on how much we know as whether or not we know the right things at the right

times. We have to cultivate a sense to recognize what factors, subjects or issues will influence the specific objectives which have been identified.

How can we collect and monitor the relevant information out of the information stream? Besides traditional methods of reading newspapers, magazines and reports, we must pay special attention to other specialized streams. The really valuable information of our time is often not public, it is communicated informally within small circles of professionals. We must cultivate personal networks to get exposed to these circles. Networking requires us to develop high interest and responsiveness to other people and new facts.

We are exposed to a vast amount of raw information. This requires us to develop skills of agile and flexible concentration so that we can shift attention without confusion and disorientation. Both tolerance of ambiguity and an ability to skim text, extract hypotheses and to test these hypotheses with new information are highly desirable attributes for any person coping with the information glut. Now can this tip help you clean up your office of the newspapers, magazines and reports which have piled up this week?

INSIDE ALBERTA

Reynolds-Alberta Museum



Come discover the history of the Machine at the newly opened Reynolds-Alberta Museum in Wetaskiwin, Alberta. The collection at the museum consists of approximately 1,400 artifacts based on four themes: Agriculture, Industry, Transportation and Aviation. Most of these artifacts were donated by Mr. Stan Reynolds of Wetaskiwin in 1981.

The museum is also home to Canada's Aviation Hall of Fame. Founded by Punch Dickens and Ray Munro in 1973, the Hall of Fame recognizes Canadians who have made a significant contribution to our aviation history. The Hall of Fame is located amidst a collection of vintage aircraft in the museum's Hangar.

Automobiles, farm equipment, interactive exhibits, audio-visual presentations and interpretive programmes will

demonstrate the technological and social changes which have led to a transformation of life in Alberta during the last century.

Make Alberta's past part of your future by visiting the Reynolds-Alberta Museum. The Museum is located 2 km west of Wetaskiwin on Highway 13 and is open year-round.

ECONOMICS

Alberta's industrial clusters

In search of Alberta's competitive advantage

The winds of change are blowing through the industrial economies of the world. Globalization of trade and economic activity has dramatically increased international competition and put pressure on the existing economic structure. Companies and governments have found that old methods of managing economies no longer work. New ways are needed to understand what makes a successful competitive industry.

The result of the research is that we now have a new way of describing Alberta's economy. The clusters identified are directly comparable to clusters identified by Porter in other countries.

One method currently gaining popularity is Industrial Cluster Analysis developed by Harvard Business School economist Michael Porter. In his book *The Competitive Advantage of Nations*, Porter contends that the environment in which firms now compete is qualitatively different than that which existed in the past. Among the changes that have taken place are increased globalization, increasingly rapid technological change, and the evolution of the company strategies of multinational firms.

In Canada at the Crossroads: The Reality of A New competitive Environment, Porter stressed the importance of these factors to Canada, which has historically relied on an abundance of natural resources, proximity to the large US market, and a tradition of protectionist policies which insulated Canadian industry from global competition.

Porter has developed a new way of looking at the competitiveness of nations. In his words:

"this new paradigm must explain several empirical facts: First, no nation is competitive in every industry, nations are competitive only in particular industries and industry segments. Second, nations succeed not in isolated industries but in entire clusters of interconnected industries. Third, the pattern of competitive clusters differs markedly from nation to nation. To understand competitiveness, we must look more deeply at national characteristics that have not been fully explored by previous work". (Porter, 1991: p 55)

Porter looked at Canada's economy from a national perspective. Strategic Planning and Research felt it was important that the competitiveness of Alberta's economy be analyzed based on the same criteria. The resulting research paper "Alberta's Industrial Clusters: In Search of Alberta's Competitive Advantage" was prepared using the following procedure.

- First, the diverse segments of the economy were examined to determine what industries are strongly linked and what industries are not. The industries with the strongest links were grouped into industrial sectors.
- Second, we applied a test of competitiveness based on an industry's share of world export markets. This is the same test that Porter uses as a means of assessing which parts of the industrial sectors are competitive and which are not.
- Third, we placed each of the industry segments that have passed the competitiveness test back into their sectors of closely related industries. Each sector was broken down by primary goods, machinery, speciality inputs, and services. These descriptions are Alberta's competitive clusters.

The conclusions drawn from this research were:

- There are seventeen potentially competitive clusters of industry activity in Alberta.
- Six of the seventeen clusters accounted for 91.3 percent of our international exports in 1990. These six clusters are: Petroleum and Gas; Agri-food; Chemicals and Plastics; Mining and Mineral Products; Paper Printing and Publishing; and Wood Products.

- Despite the importance of the above six clusters in Alberta's economy, only one — Agri-Food — shows any significant signs of positive development. A well developed cluster of competitive industries has competitive activity not only in the production of final goods but in the production of related and supporting machinery, specialty inputs, and services.
- The other clusters display their greatest strengths in the production of final goods. There is a relative weakness in activities relating to machinery, specialty inputs and services.
- The lack of development in most of Alberta's industrial clusters is linked to weaknesses in the factors that are described by Porter's competitive diamond. The diamond relates factor conditions, demand conditions, related and supporting industries, and firm strategy, structure and rivalry to the environment in which a region's industries operate.

The conclusions that come from this analysis apply first to the economy as a whole, then to each of the industrial clusters themselves. They do not apply to individual firms in Alberta. For example, if a particular firm is in a competitive industrial cluster, there is no guarantee that the firm itself is internationally competitive. The opposite is true as well. Some Alberta firms have proven to be highly competitive on the international scene, despite the lack of a fully developed competitive cluster in Alberta.

The result of the research is that we now have a new way of describing Alberta's economy. The clusters identified are directly comparable to clusters identified by Porter in other countries. By using this analysis we can see how we "stack up" to other economies.

Of even greater value is that we now have a model (Porter's competitive diamond) that we can use to look at the strength and weaknesses of Alberta's industrial clusters. The first application, "Alberta's Wood Products Cluster" was a fascinating exercise which added the human touch to the statistical analysis. It gives us an understanding of why this industry developed in Alberta and what conditions will have to change for the industry to be viable in a globally competitive future.

A series of reports applying the diamond approach to Alberta's other five largest clusters will be prepared over the next year.

If you would like to receive "Alberta's Industrial Clusters," or "Alberta's Wood Products Cluster" or to

discuss industrial clustering with us, please contact David Waldron at (403) 427-0741. With this research we can now use the same language as Porter to show how Alberta's economy can compete with the world.

INVESTIGATIONS

An important part coping in the information age is being able to identify and access the sources of information that will help you reach your objectives. Here are three more sources of information that may help.

Alberta Research Council

The technology line

The Technology Line is a 1-800 number offering access to the research and testing services of the Alberta Research Council to all Albertans. The operators are on stand-by at the Technology Line to assist the caller in determining their needs and help them access new technology, product development information and technical expertise.

The information line was started in December 1989 to augment the Research Councils business development and marketing activities. The Alberta Research Council is dedicated to promoting technology development, performing research and providing advice on technical and scientific matters. A Technology Line promotion currently underway includes the release of an information package designed to develop an awareness of the Alberta Research Council in the business community. Like their brochure says: "If your company's need for technical expertise has you stumped, take heart: there's a simple, low tech way to start getting some answers." The toll free number is 1-800-661-2000 in Alberta or 450-5000 in Edmonton.

Alberta Economic Development and Trade

Company information system

The company information system (C.I.S.) is a computer data line operated by Alberta Economic Development and Trade. It is designed to provide easy communication and reference to manufacturing and product driven businesses in Alberta. With the help of our staff you can locate potential clients, identify local Alberta suppliers of raw materials or services and allow other companies to source your company for selling and purchasing. The database lists companies from valve manufacturers to architects.

If your firm has not been listed on C.I.S. you could lose valuable opportunities to communicate with other firms and the Alberta and Federal governments and even establish international business contacts. The information is pressuring all firms to open themselves up to communication and consultation. A business's general knowledge of its industry sector is essential. This database is one of the efforts of Alberta Economic Development and Trade to establish links between businesses in the province and get them communicating.

By registering on the Company Information System, your file is automatically sent to the federal government where your company is registered on their internationally available database. Anyone can have searches done on the computer according to products, location or name. If you would like to have your company listed or request a computer search, phone our Computer Systems Group representative, Tim Jenkins at (403)427-0675.

Alberta's manufacturing industries

In January, the Strategic Planning and Research Branch of Alberta Economic Development and Trade will be releasing a profile of **Alberta's Manufacturing Industries**. This publication will provide a detailed written and statistical description of the fourteen largest manufacturing sectors. Corresponding to the two digit level of the Standard Industrial Classification (SIC) code the publication will account for 94 percent of Alberta's shipments of manufactured goods.

The publication is an effort to profile the manufacturing industry in Alberta and begins with a general introduction to the industry. Each of the fourteen industry sector descriptions includes a written industry profile, a table of economic indicators, export destinations, export commodities and some sub-sector profiles. There is also a value added table which shows the sectors contribution to gross domestic product and the change in contribution over five years. The manufacturing sector's covered include: food processing, beverage, wood industries, furniture and fixtures, paper and allied products, printing and publishing, primary metals, fabricated metals, machinery, non-metallic minerals, refined petroleum, chemical products, plastics, and electronics.

If you would like a copy of this publication contact Ralph Jaglal at (403) 427-0741.

More for less: labour productivity growth

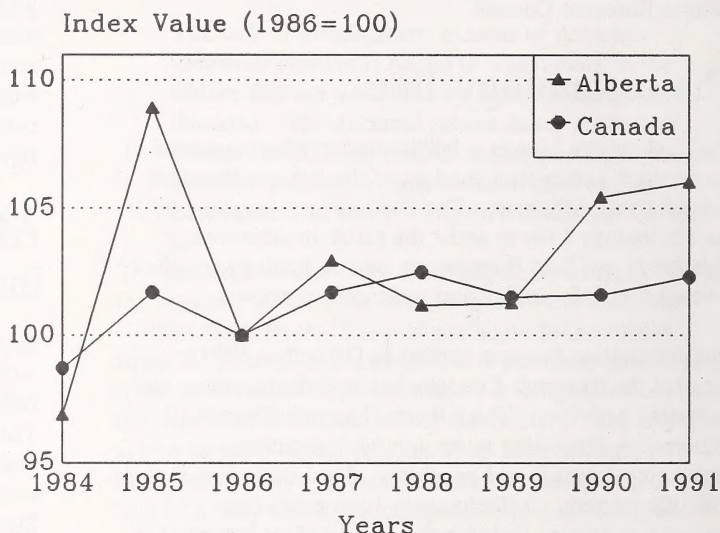
In 1789, economics became a discipline with an image problem; it was gaining a reputation as the *dismal science*. Economist Thomas Malthus was to blame. He published an essay which advocated "moral restraint" to stave off pestilence. Since the number of people was growing much faster than the amount of resources people needed, Malthus concluded that society would either have to conceive fewer babies or face starvation and disease. Fortunately, he did not account for productivity growth which has allowed us to get more output for less input.

Productivity is the ratio of the value of a product to the amount of resources needed to produce the product. When productivity increases, it means that more outputs are being produced with less inputs. It also means that there are more goods and services to go around so standards of living will increase.

The productivity measurement that touches closest to home is labour productivity—the value of production per unit of labour. A *unit of labour* is a job. A job is held by a person. And a person is paid a wage. The higher the productivity of labour the higher the wage.

In Alberta's manufacturing industries, labour productivity has been increasing since 1988. The rate of increase of manufacturing labour productivity since 1988, has also been faster in Alberta than in the rest of Canada. In addition to helping keep Alberta's standard of living high, rising labour productivity attracts investment to the province and encourages more people to move here. More people enjoying a higher standard of living? There isn't much dismal about that.

Labour productivity in Manufacturing Real GDP per unit of labour



Source: Statistics Canada 15-203

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